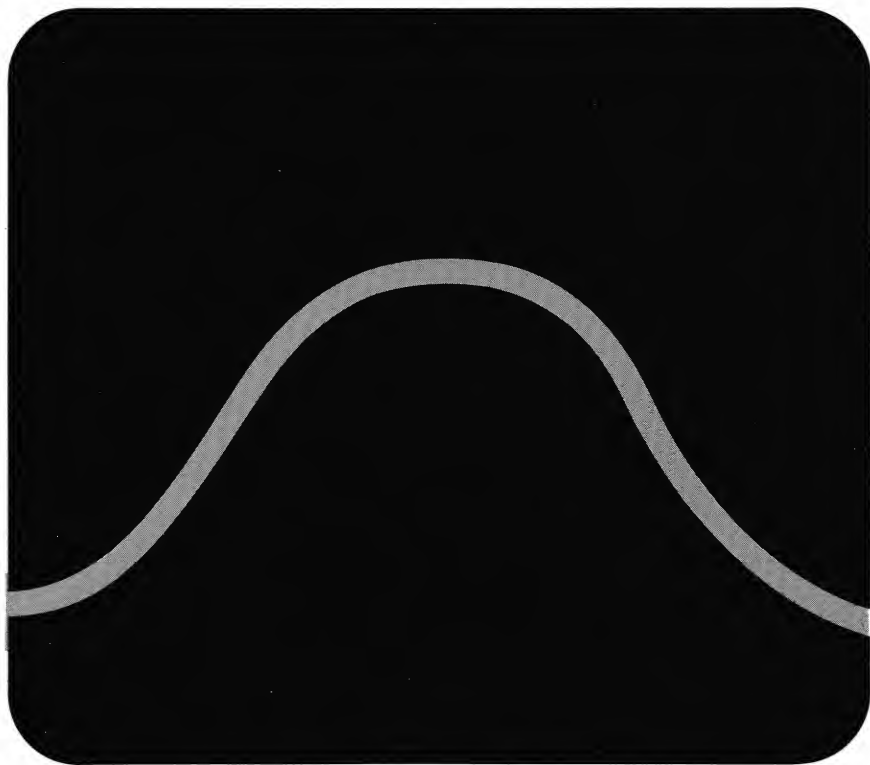


CATALOG

'68

data scales inc.

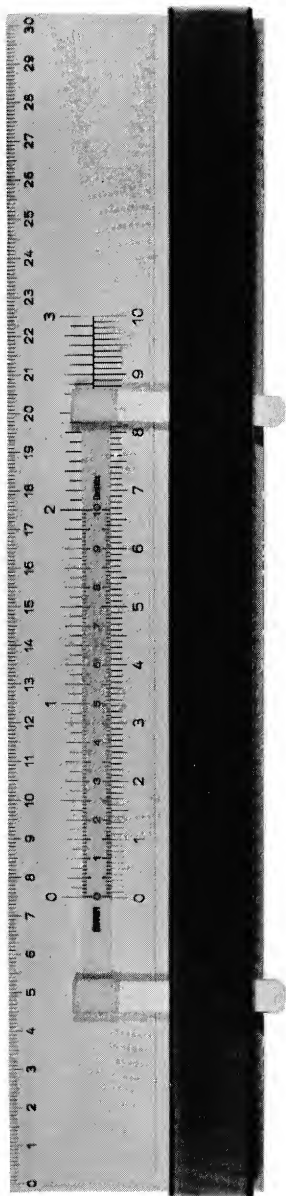
Manufacturers, distributors and importers of instruments for graphical, mathematical and scientific analysis.



data scales inc. P. O. BOX 378 • WESTFIELD • MASS. 01085

AREA CODE: 413 568-8848

FERRARI PROPORTIONAL SCALE MODEL 100



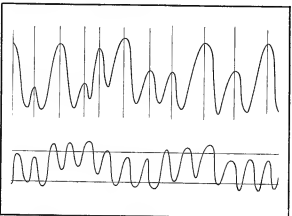
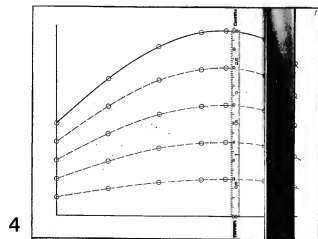
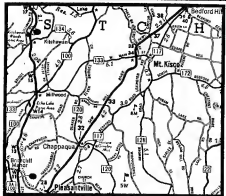
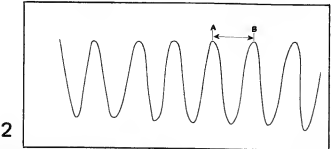
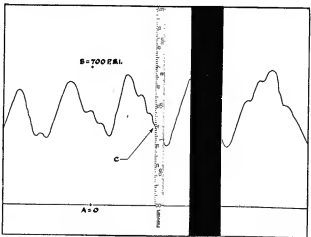
The Ferrari Model 100 is an invaluable tool for mathematicians, statisticians, engineers and scientific personnel. The device may be used as a slide rule, rolling ruler for drawing parallel lines, a variable scale for reading and plotting X-Y coordinates, and a statistical analysis instrument.

The Model 100 comes with 6 differently calibrated and interchangeable scales, enabling the reading and plotting of X-Y coordinates, scaling maps and strip chart records, etc. Also, the scale base (call-out) is a metric scale, rolling ruler and when combined with the proportional scale converts to a slide rule. Thus, the scales may be used independently or combined for various applications.

The Model 100 is light-weight, easy to handle, exceptionally easy to read, extremely accurate and designed to withstand rugged, everyday use.

Ferrari Model 100	\$49.95
Price includes carrying case, six (6) different scales and instruction manual.	
Replacement Scales - each	\$ 7.00
Shipping Weight:	2 lbs.

See page 5 for complete scale selection.



SPECIFICATIONS

Length of Scale Base	30cm
Over-all length of Proportional Scale	12"
Stretch Ratio for Variable Scales	1:4
Maximum Stretch for Variable, Scales	6"
Total weight, including case	10 oz.

TYPICAL APPLICATIONS

The first three examples at left are typical and procedure for scaling is common to all. Point A represents 0 PSI, Point B represents 700 PSI. Expanding the scale so that its calibrations correspond with Points A and B, it is then possible to take direct, scaled readings as shown at Point C. The same procedure would be used for examples 2 and 3. In example 2, it is possible to read elapsed time between peaks or events; in example 3, scaling maps and charts also become an easy task.

Example 4 is a procedure for plotting a family of curves. 20, 40, 60 and 80% of the main curve is reproduced. When 0 corresponds with the base line and 100 corresponds with the main curve at the critical points on the X axis, it is possible to mark off 20, 40, 60 and 80. When all points are plotted, they can be fitted to produce the family of curves.

Example 5 demonstrates the rolling ruler, helpful in many data reduction problems. The rolling ruler can be used to draw vertical parallel lines cutting through each peak, when trying to determine elapsed time between two peaks. The distance between the vertical lines can be measured with the proportional scale. This would also yield "lead" or "lag" for phase relationship analysis. In addition, horizontal, parallel lines may be drawn when averaging traces.

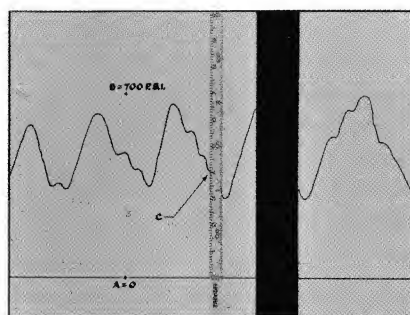
ACCURACY AND ESTIMATED LIFE

Accuracy of the expandable scales is 0.2% at any state of elongation. Estimated life is approximately four (4) years.

FERRARI PROPORTIONAL SCALE MODEL 50

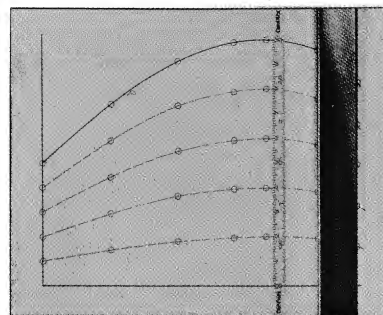


The Ferrari Variable Scale, Model 50, can be used for reading and plotting X-Y coordinates, scaling maps and strip chart records, and is an invaluable tool for mathematicians, statisticians, engineers, and scientific personnel.



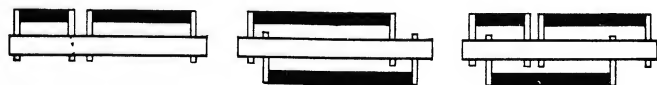
Example 1

Point A represents 0 PSI; Point B, 700 PSI. By expanding the scale so that its calibrations correspond with Points A and B, it is then possible to take direct scaled readings as shown at Point C.



Example 2

Example 2 depicts a procedure for plotting a family of curves. 20, 40, 60 and 80% of the main curve is reproduced. By adjusting the scale so that 0 corresponds with the base line and 100 with the main curve at critical points on the X axis, it is possible to mark off 20, 40, 60 and 80. When all the points are plotted, they can be fitted to produce the family of curves.



EXAMPLE 3

Multiple variable scales mounted in the holder can be extremely helpful when more than one channel of information is being analyzed.

REPLACEMENT SCALES

A selection of scales is shown, below. These may be purchased separately as replacements or for special applications.



10/10



10/4



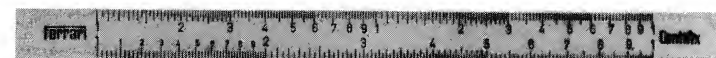
10/3



10/45



Probability



Log

ACCURACY AND ESTIMATED LIFE

Accuracy of the expandable scales is 0.2% at any state of elongation. Estimated life is approximately four (4) years.

SPECIFICATIONS

Over-all length of Proportional Scale 12"
Stretch ration for Variable Scales 1:4
Maximum Stretch for Variable Scales 6"

Ferrari Model 50 \$17.50

Price includes carrying case, and instruction manual.

Replacement Scales - each \$ 7.00

Shipping Weight: 1 lb.

DATA SCALER

INTRODUCTION

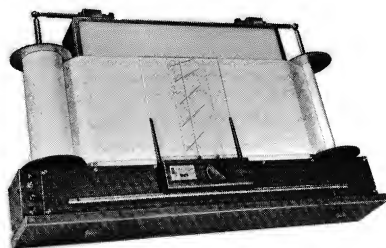
The Data Scaler data reduction equipment is designed for rapid, efficient analysis of all types of strip chart records. Automatic and manual instruments remove the tedium from everyday scientific activity with little training.

WARRANTY

All Data Scaler products are guaranteed to be free from any defects in workmanship and material. Should any such defect be discovered within one (1) year from date of purchase, the Company on receipt of unit, postage prepaid, will repair such defect at no charge and return the unit express collect. The Warrantee does not cover breakage of any part in shipment or through negligence in use.

PRICE AND DELIVERY

All prices noted are F.O.B. destination. Terms, 1% 10 days, net 30. Delivery is within 30 days ARO.

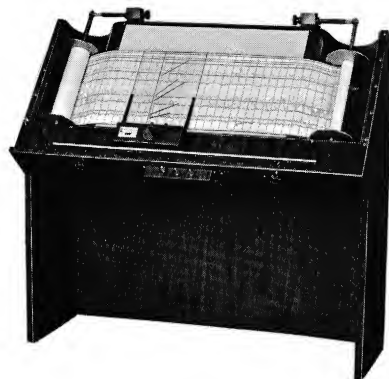


DATA VIEWER
Model "300"

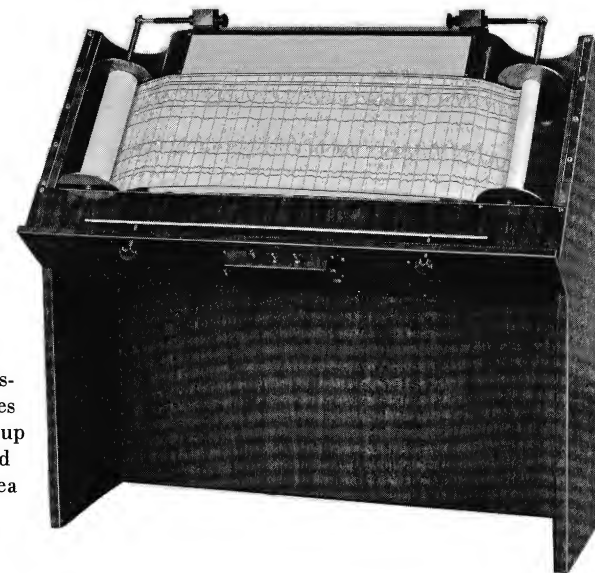
Shown with the Data Scaler Model
"400" and Mounting Attachment

DATA VIEWER
Model "500"

Shown with the Data Scaler Model
"400" and Mounting Attachment



DATA VIEWER MODEL 500



The Data Viewer 500 is a console-type motorized paper transport designed to handle all types of strip chart records. Records up to 16" wide may be transported across a backlighting viewing area at variable speeds.

CONSOLE

Constructed of $\frac{3}{4}$ " plywood, Formica covered, the Console is 4'H x 4'W x 21"D. The backlighting viewing area is 17" x 26 $\frac{1}{2}$ " and can be operated with or without lighting. Approximately 32" of record is exposed at all times.

SPINDLES

The spindles at either end of the viewing area accept any type or width of record up to 16" with a maximum roll diameter of 6". Angular adjustments are provided and records may be transported without tearing or damaging the edges.

ELECTRICAL DRIVE

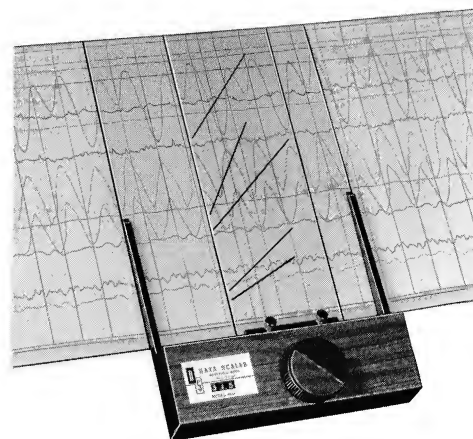
A bi-directional, electrical drive system transports the records being analyzed. Instant positive braking and static tension are incorporated. Speed is infinitely variable from 0 to 500 feet per minute.

PRICE

Data Viewer, Model 500	\$ 895.00
Mounting Attachment (to incorporate Data Scaler, Model 400)	95.00
Complete Data System, including Data Viewer and Data Scaler	1385.00

(Ref. Photo - Page 6)

DATA SCALER MODEL 400



The standard Data Scaler, Model 400, can handle records to 12" or 16" in width (specify).

DESCRIPTION

The Model 400 is a manual instrument able to meet the requirements for evaluation and analysis of all types of strip chart records. The instrument is ideal for quick-look, spot checking or thorough analysis of an entire record. Slopes can be drawn on a plastic overlay so that single or multiple channels of information can be read directly. Problems of origin offsets, scale factors and non-linear calibrations are easily overcome. Answers appear in digital form on a three-digit counter.

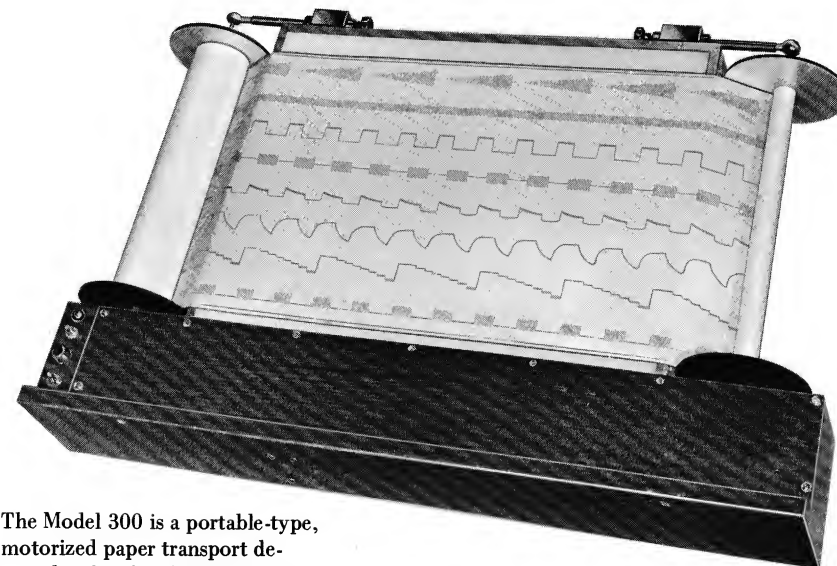
The Data Scaler 400 enables direct reading without a calculator to correct scale factors. The combination of simple techniques and precision machined parts guarantee a highly reliable instrument.

SPECIFICATIONS

Resolutions	1000 counts per inch
Counter-Digital Range	0-999
Record Size (specify)	12" or 16"
Overall Size	9" x 16"
Weight (approx.)	2 lbs.
Carrying Case Size	4" x 12" x 18"

Data Scaler, Model 400 \$395.00
(includes attache-type carrying case, six (6) plastic overlays, special marking pen, instruction manual)

DATA VIEWER MODEL 300



The Model 300 is a portable-type, motorized paper transport designed to handle all types of strip chart records up to 16" wide on a back-lighted viewing area at variable speeds.

DESCRIPTION

The Model 300 is a portable version of the Model 500, containing the identical electrical and mechanical features. Overall dimensions are 23"H x 38"W x 5"D. The backlighted area is 17 x 24" and can be operated with or without lighting.

SPECIFICATIONS

(same as Model 500)

PRICE

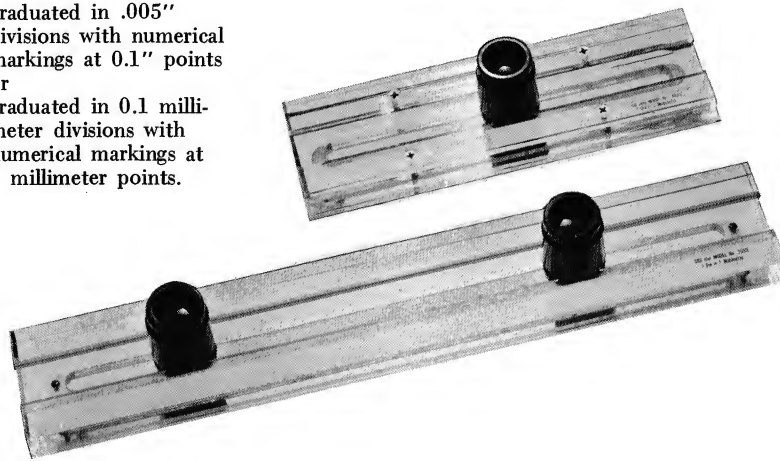
Data Viewer, Model 300	\$ 595.00
Mounting Attachment for Data Scaler	95.00
Complete Data System — (Ref. Photo Page 6)	1085.00

GURLEY RAPID COMPARATOR

AN OPTICAL MEASURING INSTRUMENT

The Gurley Rapid Comparator is a precision optical measuring device, designed for use where accurate measurement is important. Measurements to accuracies of $\pm .002''$ or $\pm .05$ millimeters can be made in a matter of seconds.

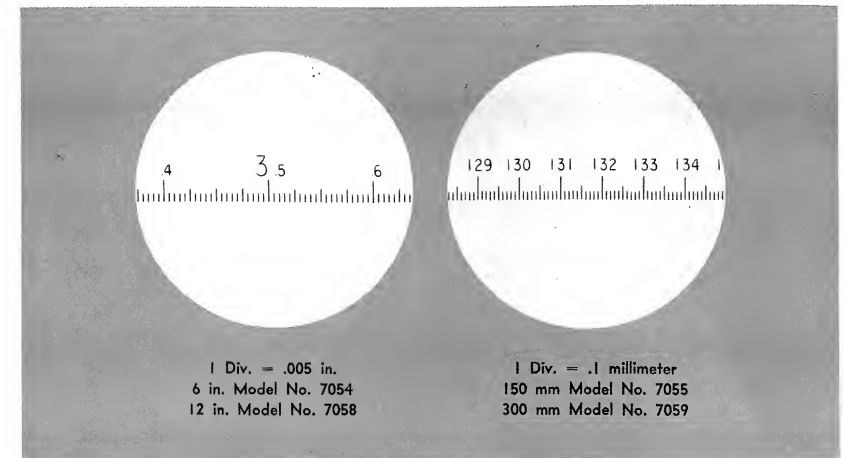
1. graduated in $.005''$ divisions with numerical markings at $0.1''$ points or
2. graduated in 0.1 millimeter divisions with numerical markings at 1 millimeter points.



The heart of the Gurley Rapid Comparator is a precision etched glass scale, the master for which is ruled on a Geneva Society (S.I.P.) engine accurate to 5 microns. The etched scale is cemented in the base of the instrument with a clearance of approximately $.002''$ between the scale and the work being measured. The small gap avoids parallax problems, because the lens and work are very close to the same plane, as well as prevents abrasion during use.

The scale is observed through an optically-corrected triplet lens, having a magnification of 7X. The lens holder slides in the base and may be adjusted vertically in the slide for the focus best suited to the individual user.

GURLEY RAPID COMPARATOR



APPLICATIONS

Photography: Aerial, Astronomical Measurements, Satellite tracking, multi-color registration negatives.
Graphic Arts: Engraving, Lithography, Cartography
Electronics: Printed Circuitry, Transistor Masks, Encoder Patterns, Optical Tooling
Drafting: Checking Master Drawings

Four Models presently available:

ENGLISH SYSTEM

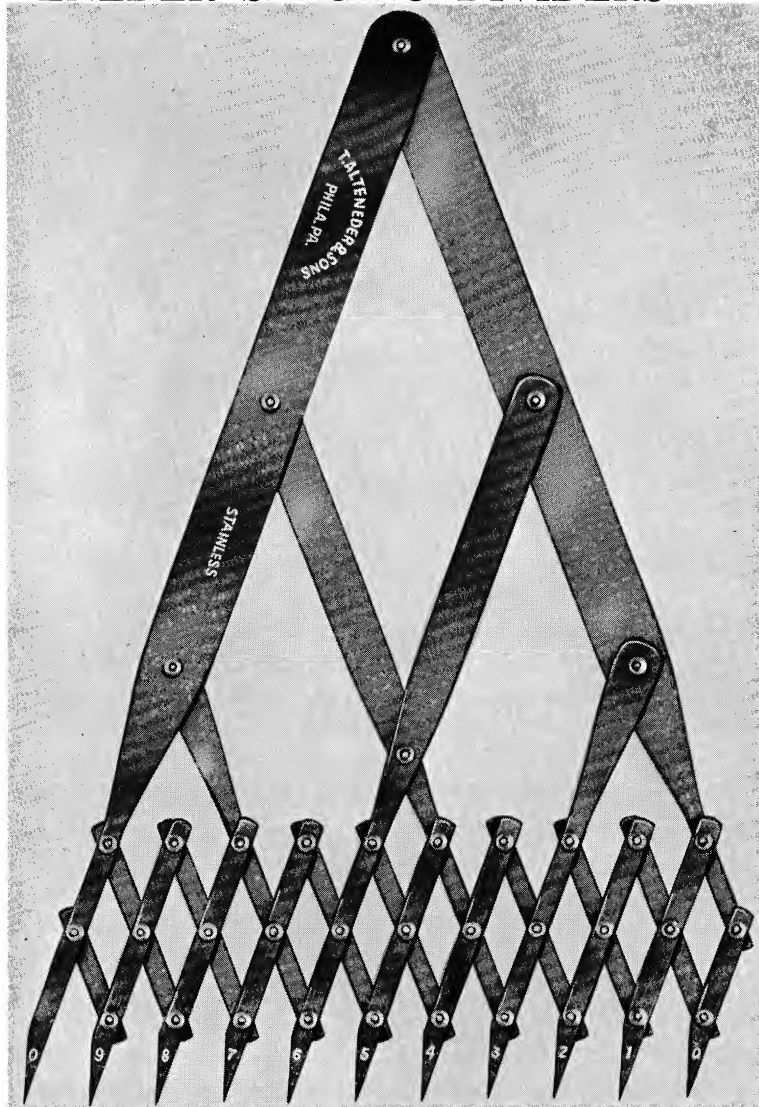
Model 7054 — having a 6" scale with $.005''$ divisions	\$ 75.00
Model 7058 — a 12" scale with a $.005''$ divisions, two eyepieces	135.00

METRIC SYSTEM

Model 7055 — with a 150mm scale, 0.1mm divisions	\$ 75.00
Model 7059 — a 300mm scale with 0.1mm divisions, two eyepieces	135.00

(Longer scales, similar to above, are available on special orders)

ALTENEDER SPACING DIVIDERS



The Alteneder Space Dividers consist of eleven (11) teeth, so adjusted as to always divide the extreme setting in 10 equal parts.

Model 2960 – 6" Spacing Dividers, Stainless Steel \$50.00
Distance between points – Minimum 1/8",
Maximum 5/8"

Model 2965 – 12" Spacing Dividers, Stainless Steel \$65.00
Distance between points – Minimum 1/4",
Maximum 1-1/4"

ALTENEDER MICRO-RULE

A modern instrument for accurate measurement and layout work, Micro-Rule reads clearly and accurately to 1/1000th part of an inch.



The main scale is graduated in inches; the slide graduated in 10ths of an inch and has a movement of 1/10". Controlled by a cam, the amount of movement is read directly on the dial. Since the dial is graduated in one hundred parts and moves the slide direct a maximum of 1/10", settings to 1/1000" are obtained instantly.

Examples:

1. To lay off 3.626 inches, 26 is set on the dial. Then, the distance between 3 on the main scale and 6 on the slide scale is exactly 3.626".
2. Distances less than one inch are obtained by setting the dial on zero and laying the instrument down so that zero of the slide scale coincides with the first mark. Without disturbing the instrument, the dial is then turned until the dial has the right setting, or until a line of the slide scale coincides with the other mark of the instrument.

APPLICATIONS

Time-saver in both Rectangular and Polar Layout where great accuracy is required

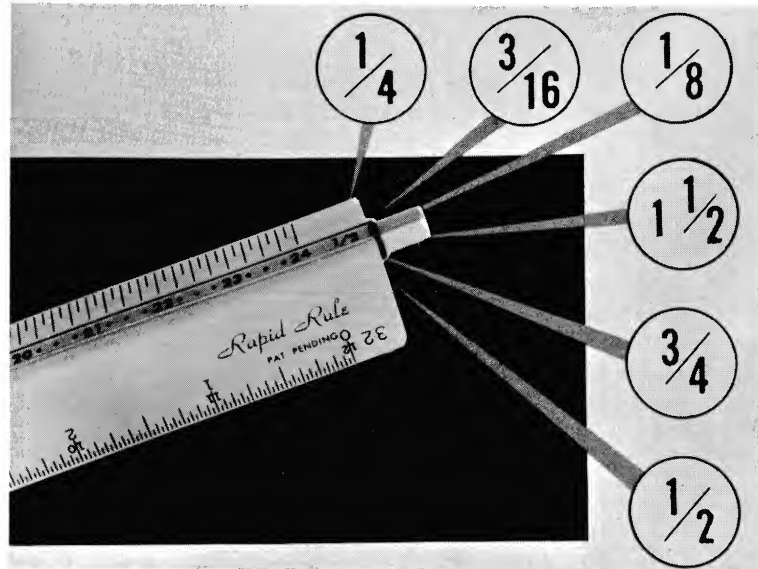
Helpful in laying out accurate angles using a base of 10" and a table of tangents

Invaluable in obtaining accurate color registration in multicolor printing

Model	Description	Price
2190	6-inch	\$ 90.00
2191	12-inch	100.00
2192	18-inch	115.00
2193	24-inch	130.00
2194	30-inch	155.00
2195	36-inch	175.00
2196	42-inch	205.00
2197	48-inch	240.00

Furnished in hardwood cases.

RAPID RULE



A Fast, Convenient, Easy-to-Use scale for Architecture, Engineering and the Graphic Arts.

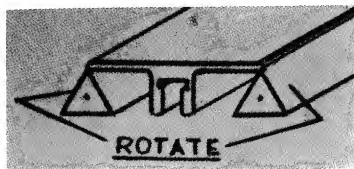
Rapid Rule is an ingenious scale that is extremely fast, practical and easy-to-use. The device obsoletes the old-fashioned and inconvenient triangular scale. No More Fumbling, Twisting or Turning. Rapid Rule is always ready to use. . . . never upside down or reversed. The unit is an ideal tool for anyone whose work involves layout or design.

6 Scales — Immediate Selection

Just a quick twist of the knob provides any one of six scales, ranging from 3/16" to 1-1/2".

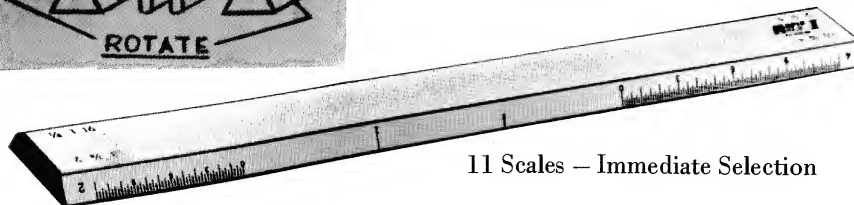
Price \$5.00

RAPID RULE II



Rotating triangular member, positioned on each side of this flat rule, enables immediate selection of any desired scale. Once selected, the scale remains in view until the member is again rotated.

The Rapid Rule II flat design prevents it from becoming turned around or upside down as often occurs with the conventional triangular rule.

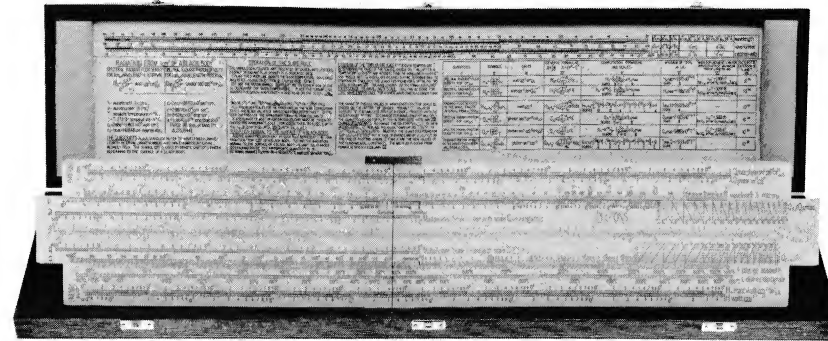


11 Scales — Immediate Selection

The Rapid Rule II combines triangular rule versatility with flat scale convenience.

Price \$5.00

IRCON SLIDE RULE



PLANCK LAW RADIATION SLIDE RULE

Computations based on the Planck Radiation Law are simply and accurately accomplished with a newly available slide rule. Radiation flux densities at any particular wavelength, or integrated over any wavelength interval, can be computed directly for any source temperature from 100°K to 10,000°K, and for wavelengths of 0.3 to 3000 microns. Scale extensions beyond these limits may also be computed.

Calculations may be done on an energy basis or on a photon flux basis. Accuracy of reading is one percent or better over most of the scale.

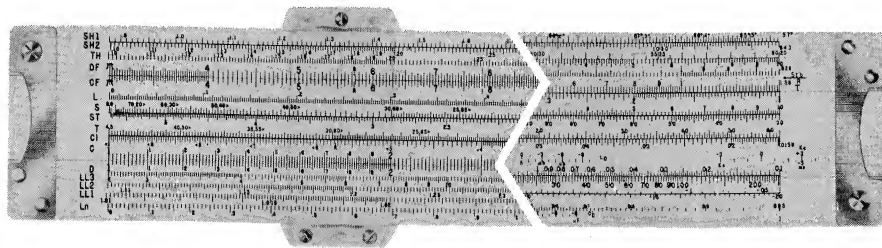
This slide rule is an invaluable aid for anyone involved in quantitative design of infrared systems. It also can be effectively used in almost all electro-optical research and design.

The eighteen inch rule is constructed of the highest quality material, legibly marked in black and red on a white background. The slide rule is delivered in its own fitted wood case.

Originally developed in England, the slide rule is manufactured under agreement with the British Admiralty Research Laboratories, holder of the Crown Copyright.

The price of the rule including case and operating instructions F.O.B. delivered anywhere in the continental U. S. is \$150.00. Delivery is normally from stock.

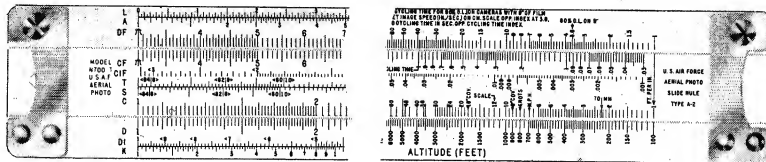
PICKETT



ELECTROLOG

A Log Log dual base exponential slide rule for professionals and advanced students in electronics and electrical engineering. Eighteen special scales in addition to 16 scales found on advanced model slide rules reduce the number of settings and "read and transfer" steps in such usually complex problems as solving for X_c and X_L , Resonant Frequency, RC Coupling Network, Transmission or Delay Lines, Delay Time and the Time Constant. Available in Eye-Saver Yellow only, complete with definitive instruction manual and Leather Carrying Case. Ten-inch scale sections on 2" body.

N16LC 10" Electronics Log/Log Speed Rule Leather Case \$29.95

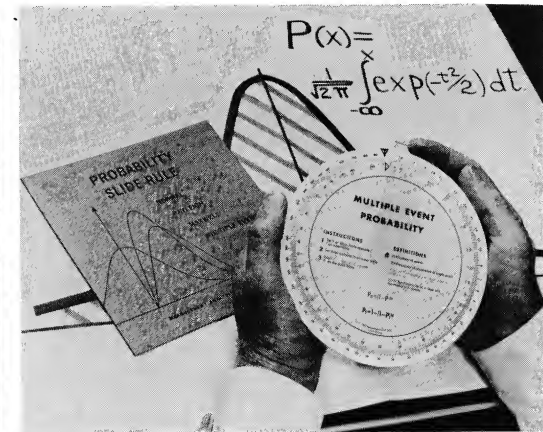
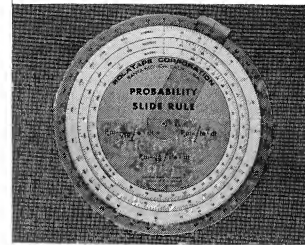


AERIAL PHOTO RULE

A special rule (Air Force Type A-2) for determining lens opening, image size, ground size, cycling time plus eleven basic scales for finding solutions to trig and math problems. Available in White (T). Reminder instructions on rule.

N700LC 6" Aerial Photo Rule Leather Case \$13.00
N520LC 10" Aerial Photo Rule Leather Case 25.50

ROLATAPE PROBABILITY SLIDE RULE



Rolatape Probability Slide Rule eliminates the necessity of looking up numerical values in mathematical tables, with significant savings in time. Quick, accurate answers are provided for an unlimited variety of problems. The Rule is made of white plastic, 6-1/2" in diameter and packaged with a complete set of instructions.

Computations with the Probability Slide Rule are accurate to three or four significant figures, depending on the scale.

SIDE ONE

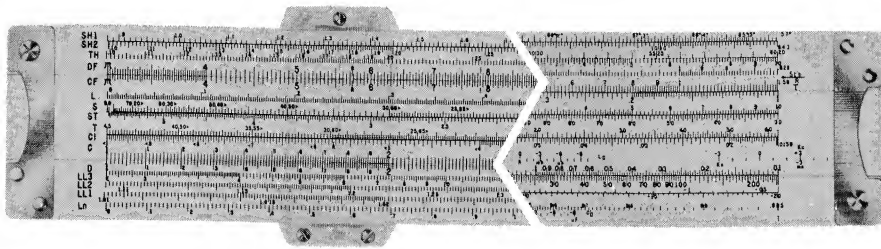
One side of the slide rule permits direct reading of probability values for three probability distributions: Normal (GAUSSIAN), RAYLEIGH, and MAXWELL. For the important Normal distribution, probability values between .0001 and .999 may be read, while the Rayleigh and Maxwell scales are calibrated between zero and .999.

SIDE TWO

Side two is used to compute the probability of no successes, or at least one success in a given number of independent trials.

Price \$5.95

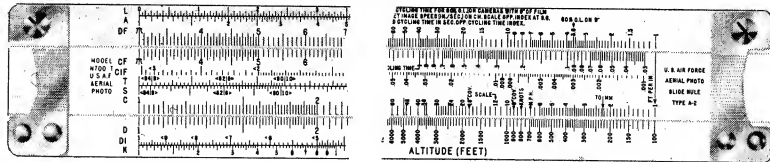
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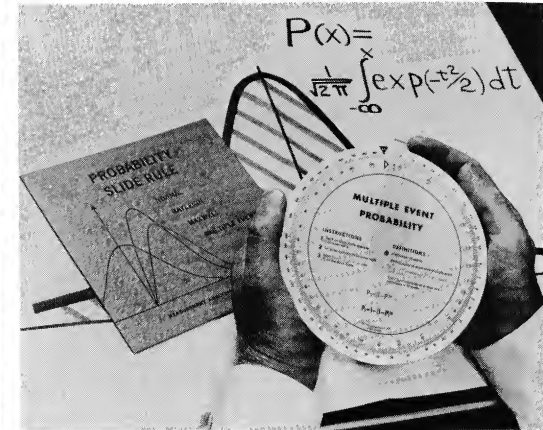
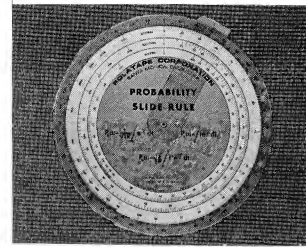


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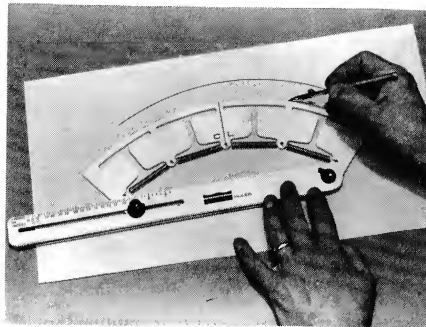
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SIDE TWO

Side two is used to compute the probability of no successes, or at least one success in a given number of independent trials.

Price \$5.95

ACU-ARC RULER



The adjustable ACU-ARC Ruler allows the drawing of large curves and arcs in seconds with any radius from 6-3/4" to infinity. The device eliminates the need for beam compasses, railroad and highway curves. In addition, the Ruler can be used to 1) determine the radius of existing curves for dimension drawings, 2) find center lines and center points of curves, and 3) determine what radius a curve must be to fair in existing points or lines on drawing.

PRICE: \$10.00

Simple to adjust and use, exact radius desired can be obtained by loosening adjusting knob, setting pointer at specified position on calibrated scale and tightening knob.

ACU-ARC ADJUSTABLE CURVES



Adjustable Ship Curve — 18" or 24" lengths, quickly finger-shaped to exact curve desired in seconds.

Adjustable French Curve — easily shaped to any smooth curve, made of nine interlocking layers for curves down to 1/2" radius.

ACU-ARC Adjustable Curves provide a quick, easy way to draw a fair curve through a series of plotted points. . . replacing a whole draw of rigid curves at a fraction of the cost. Formed of interlocking layers of butyrate plastic, these flexible instruments are finger-shaped to the desired curve and held in place by friction. Smooth, non-rippling edges assure a smooth-line curve with pencil or pen.

SHIP CURVE

18" \$4.50

24" 4.95

FRENCH CURVE

\$4.75

OTT COMPENSATING POLAR PLANIMETERS

The compensating polar planimeter has become the most widely used type of integrator due to its versatility and the simplicity of its operation.

Areas are measured with the planimeter by simply guiding the tracer point once around the boundary of the area to be determined. The instrument is therefore used for determining areas on maps, plans or blueprints. In addition, it is employed for evaluating the results produced by recording instruments, for determining statistical average values, the staple length of fibres (textile industry), the mean water level (hydrometry), stress deformation (materials testing), magnetic hysteresis losses (electrotechnics), the extent of earthworks (railroad and highway construction, civil engineering), etc.



OTT Compensating Polar Planimeter No. 30.115

If the volume of work is too small to justify the purchase of a separate integrator, the instrument may also be used to determine the integral curve of a given curve if its area is subdivided into areas of identical abscissa. Guiding the tracer point of the planimeter around the boundaries of these partial areas, the vernier values are noted, from which the ordinate points can be computed very simply. When these points have been plotted, the integral curve can be drawn.

The most important part of the planimeter's measuring mechanism is the measuring wheel which rolls and slides on the drawing as the tracer point is guided around the area to be measured. The number of its revolutions is proportional to the size of this area. The convex edge of the measuring wheel is serrated. The precision of this serration — which is comparable to microscopically fine teeth — is one of the factors determining the accuracy of the instrument. The number of complete revolutions of the wheel can be read on a dial. Partial revolutions down to thousandths of a full revolution can be read on a graduated drum with the aid of a vernier. A built-in reading lens permits easy reading.

The instrument can be supplied: with fixed or adjustable tracer arm ● with needle or ball pole with tracer point or tracer lens ● with or without zeroing device for the metric and/or British measurement systems.

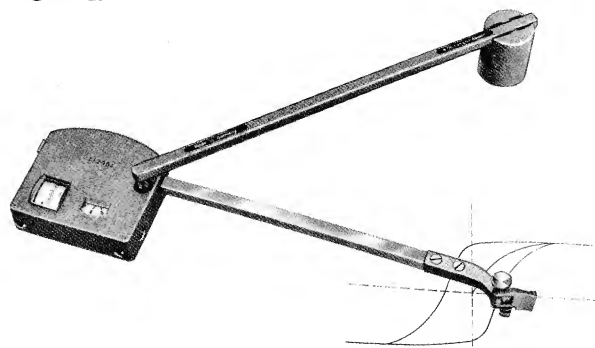
The adjustable tracer arm offers the advantage that vernier values can be varied. Planimeters equipped with a fixed tracer arm have only a single vernier value.

The use of a tracer lens instead of a tracer point is advisable whenever the material to be evaluated is sufficiently clear. It has a magnification of about 2, has a bright field of view and allows parallax-free following of the curve.

The zeroing device permits the measuring wheel and the dial to be zeroed by simply pushing in a knob. The result of the measurement can thus be read off immediately without calculating the difference between the initial and final readings.

(Prices on page 23)

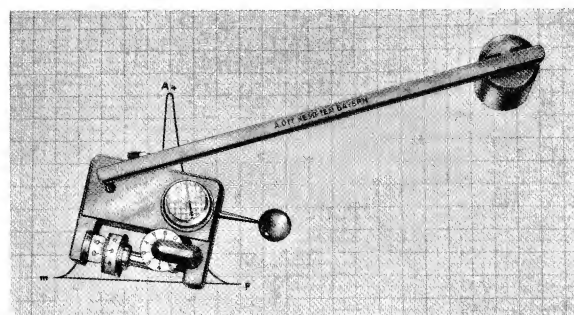
OTT



OTT Compensating Polar Planimeter
No. 30.010

OTT Compensating Polar Planimeter with fixed tracer arm

Catalogue No. with needle pole	equipped with	Vernier value	Length of tracer arm	Length of pole arm	Tracing range	
					rectangle	circle
30.010 30.011 30.013	tracer point tracer lens tracer lens and zeroing device	10 mm ²	166 mm	194 mm	400 x 200 520 x 150 620 x 50 mm	dia. 700 mm
30.026 30.027 30.029	tracer point tracer lens tracer lens and zeroing device	0.01 sq. in.	4.5 in.	7.5 in.	10 x 6 14 x 5 18 x 3 in.	22 in.



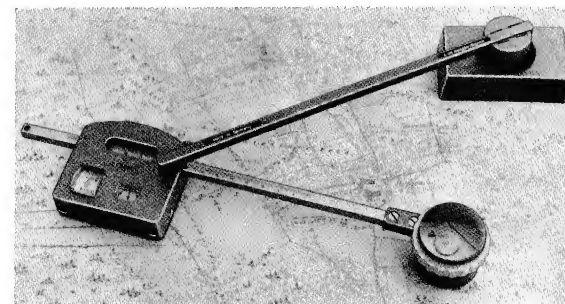
OTT Compensating Polar Planimeter
No. 30.044

OTT Compensating Polar Planimeter for very small areas

Catalogue No.	equipped with	Vernier value	Length of pole arm	Tracing range
30.044	needle pole and tracer lens	2 mm ²	170 mm	120 x 35 mm

(Prices on page 23)

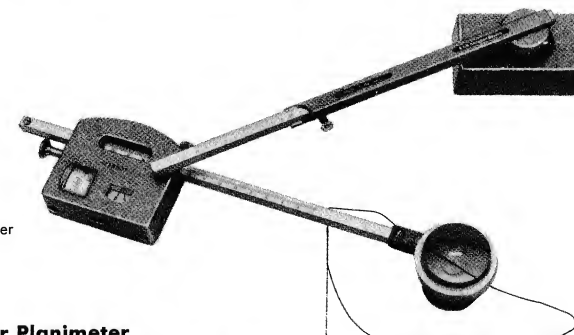
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OTT Compensating Polar Planimeter
No. 30.113

OTT Compensating Polar Planimeter with adjustable tracer arm

Catalogue No.		equipped with	Vernier value *	Length of tracer arm	Length of pole arm	Tracing range	
with needle pole	with ball pole					rectangle	circle
30.100 30.101	30.112 30.113 30.115	tracer point tracer lens tracer lens and zeroing device	4-10 mm ² 0.006-0.016 sq. in.	166 mm 6.5 in.	194 mm 7.6 in.	400 x 200 520 x 150 620 x 50 mm	dia. 700 mm
	30.160 30.161	tracer point tracer lens	8-20 mm ² 0.012-0.032 sq. in.	330 mm 13 in.	370 mm 14.6 in.	600 x 500 1200 x 200 mm	dia. 1350 mm



OTT Compensating Polar Planimeter
No. 30.139

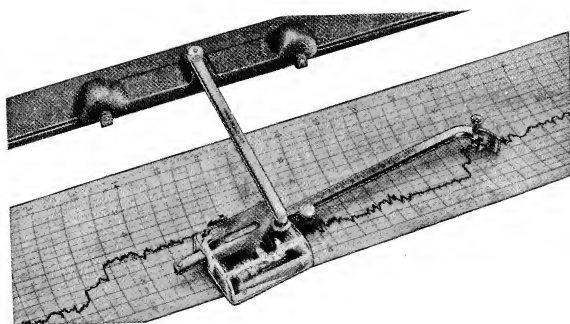
OTT Compensating Polar Planimeter with adjustable tracer and pole arms

Catalogue No.		equipped with	Vernier value *	Length of tracer arm	Length of pole arm	Tracing range	
with needle pole	with ball pole					rectangle	circle
30.124 30.125	30.136 30.137 30.139	tracer point tracer lens tracer lens and zeroing device	4-10 mm ² 0.006-0.016 sq. in.	166 mm 6.5 in.	150-320 mm 5.9-12.6 in.	380 x 250 510 x 215 620 x 175 mm	dia. 920 mm

* If the planimeter is to be supplied with an adjustable tracer arm for the British or the British and metric measurement systems, special mention to this effect should be made in the order. Where no such statement is made, the instrument is supplied with a metric table.

Planimeters 30.113 can also be used for the simple determination of the **mean height of diagrams directly from the reading of the measuring mechanism**, provided that the instrument is equipped with a **measuring wheel of exactly 60 mm, or 2.4 in. circumference**. The mean height is directly determined by multiplying the reading of the measuring mechanism by a constant. (For surcharge see price list.)

(Prices on page 23)



Straight-Line Guide with carriage and guide rail

Catalogue No. 30.300

available for use with polar planimeters to permit the measurement of very long diagrams.

Length of guide rail: 1370 mm (54 in.)

Tracing range:

Nos. 30.010–30.139: 1150x300 mm (45x12 in.)

Nos. 30.160–30.161: 1150x550 mm (45x22 in.)

With all OTT Polar Planimeters, the smallest graduation interval to be read at the vernier corresponds to one thousandth of the circumference of the measuring wheel. This is called the **vernier unit (VU)**.

Depending on the **length of the tracer arm**, the vernier unit corresponds to a certain **area value** in the plan or the diagram, which is called the **vernier value**.

Polar planimeters with a **fixed tracer arm** (Nos. 30.010–30.044) have only **one vernier value**.

Polar planimeters with an **adjustable tracer arm** (Nos. 30.100–30.161) can be set for **several vernier values** as indicated on page 3. The advantage of this feature is that the instrument can easily be adapted to different plan scales and that the reading accuracy is increased.

The adjustable tracer arm of the OTT Compensating Polar Planimeter is provided with a graduation which permits a simple relationship to be established between the length of the tracer arm and the vernier value. This considerably reduces the time required for evaluating a larger number of similar technical diagrams or determining mean heights.

The provision of a needle pole or a ball pole is designed to satisfy the individual requirements of customers. Apart from protecting the paper, the ball pole facilitates the setting up of the planimeter and zero-setting of the measuring mechanism.

OTT Compensating Polar Planimeters are high-precision instruments.

The precision of the rim and the bearing of the measuring wheel, the elimination of errors which might be introduced by lifting the tracer point and the prevention of play guarantee a high accuracy of measurement.

Please state number of delivered instrument if information in reference to it should become necessary.

(Prices on page 23)

COMPENSATING POLAR PLANIMETERS

CATALOG NO.	PRICE	CATALOG NO.	PRICE
30.010	\$65.00	30.113*	\$ 99.00
30.011	75.00	30.115	116.00
30.013	91.00	30.160	99.00
30.026	65.00	30.161	110.00
30.027	75.00	30.124	99.00
30.029	91.00	30.125	110.00
30.044	67.00	30.136	105.00
30.100	87.00	30.137	113.00
30.101	97.00	30.139	129.00
30.112	90.00	30.300	159.00

*Planimeter Catalog No. 30.113 can also be supplied with a measuring wheel of exactly 60mm or 2.4 inches circumference instead of the regular measuring wheel at an extra charge of \$5.00.

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NEW – COMPACT – EASY TO USE
NATURAL TRIGONOMETRIC FUNCTION FINDER

TRIG-FAN is a compact set of one minute tables of trigonometric functions listing natural sines-cosines, tangents-cotangents, all to seven decimal places. Tan-Cot on one side, Sin-Cos on the reverse side, TRIG-FAN is lightweight and so simple, handy and easy to use, you'll wonder why no one has invented it before now. Actual size is 7½" x 1¼" x ¾" thick. TRIG-FAN is ideal for field or desk work – provides fast reference and tables you can read directly, reducing the chance of error. An absolutely accurate set of one minute tables to seven decimal places. One of the nation's outstanding surveying firms* considers the new Ridgway TRIG-FAN a "great new tool for surveyors, engineers, teachers and students."

ADDED FEATURES

Average tabular differences per minute located at ten minute intervals – in color! Plus engineer's scale, interpolation table and frequently used formulas.

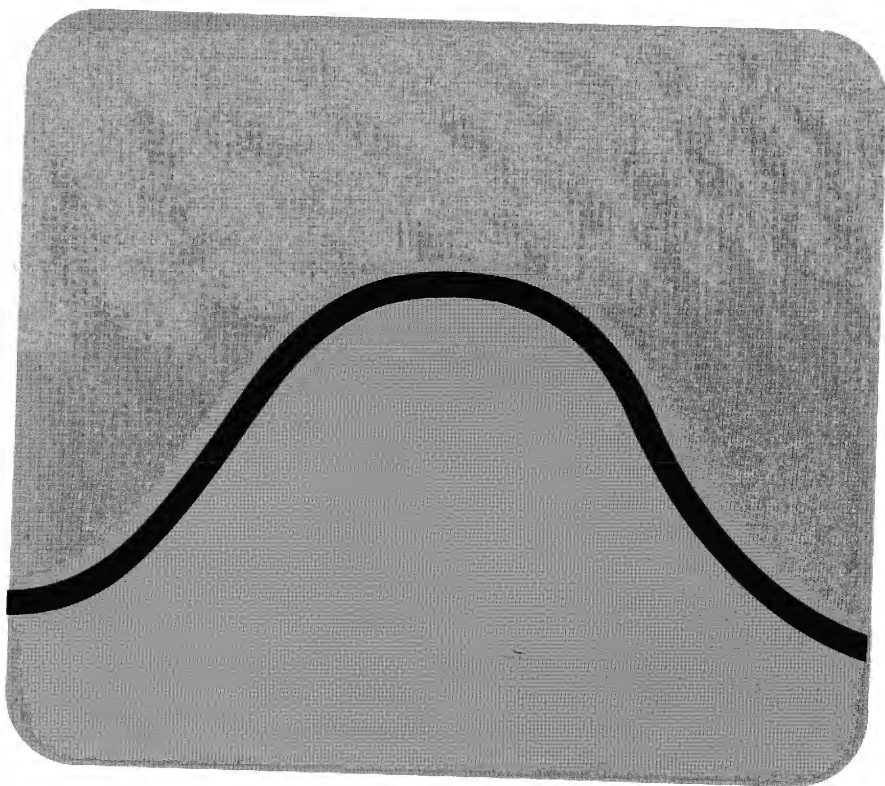


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